

RE-DISCOVERY OF *SCHOENUS NATANS* (CYPERACEAE)

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INTRODUCTION

The sedge *Schoenus natans* (F. Muell.) Benth. has only been collected twice. The first being an undated Drummond collection, without a precise locality, that forms the type collection. The other is a 1911 collection from the Cannington area. The species has been listed as presumed extinct with little hope of re-discovery (Leigh, Boden and Briggs, 1984) as the eastern side of the Swan Coastal Plain (where Cannington is located) is largely urbanised or cleared for farming. Numerous attempts to relocate the species have been unsuccessful.

During preliminary survey of an area of remnant bushland south of Pinjarra as part of a study of the floristics of the Swan Coastal Plain (Gibson *et al.*, 1994) from Gingin to Dunsborough, an unusual sedge was located. This species was growing in shallow freshwater pools amongst areas of burnt *Melaleuca* shrubland. Upon close examination these plants proved to be *Schoenus natans*. The site was re-visited several times to gather further information on the habitat and biology of this unusual sedge.

BIOLOGICAL OBSERVATIONS

The habitat for *Schoenus natans* at this site is low open shrubland of *Melaleuca viminea*, over *Leptocarpus canus* and *Leptocarpus co-angustatus* Sedgeland. Within this vegetation type are shallow pools (5–20 cm. deep) with a grey brown clay base. The pools fill by rain in early winter (May to July), and the *Schoenus* germinates in this period. By spring (August to September) the pools support a diverse assemblage of aquatics usually including *Schoenus natans*, *Aponogeton hexatepalus*, *Isoetes drummondii*, *Triglochin procera*, *Villarsia submersa*, *Callitriche hamulata* (a new record for the Swan Coastal Plain, and the Perth region), and *Callitriche stagnalis*. Thus the area contains two species of declared rare flora in these ponds (*Aponogeton hexatepalus* and *Schoenus natans*). The whole area of remnant bushland, though small contains another species of rare flora (*Centrolepis caespitosa*) and 435 (380 natives) species of vascular plants (Keighery, *et al.*, 1994) in total. This illustrates like Brixton Street, with over 372 (308 natives) species in a smaller area of 19 hectares (Keighery

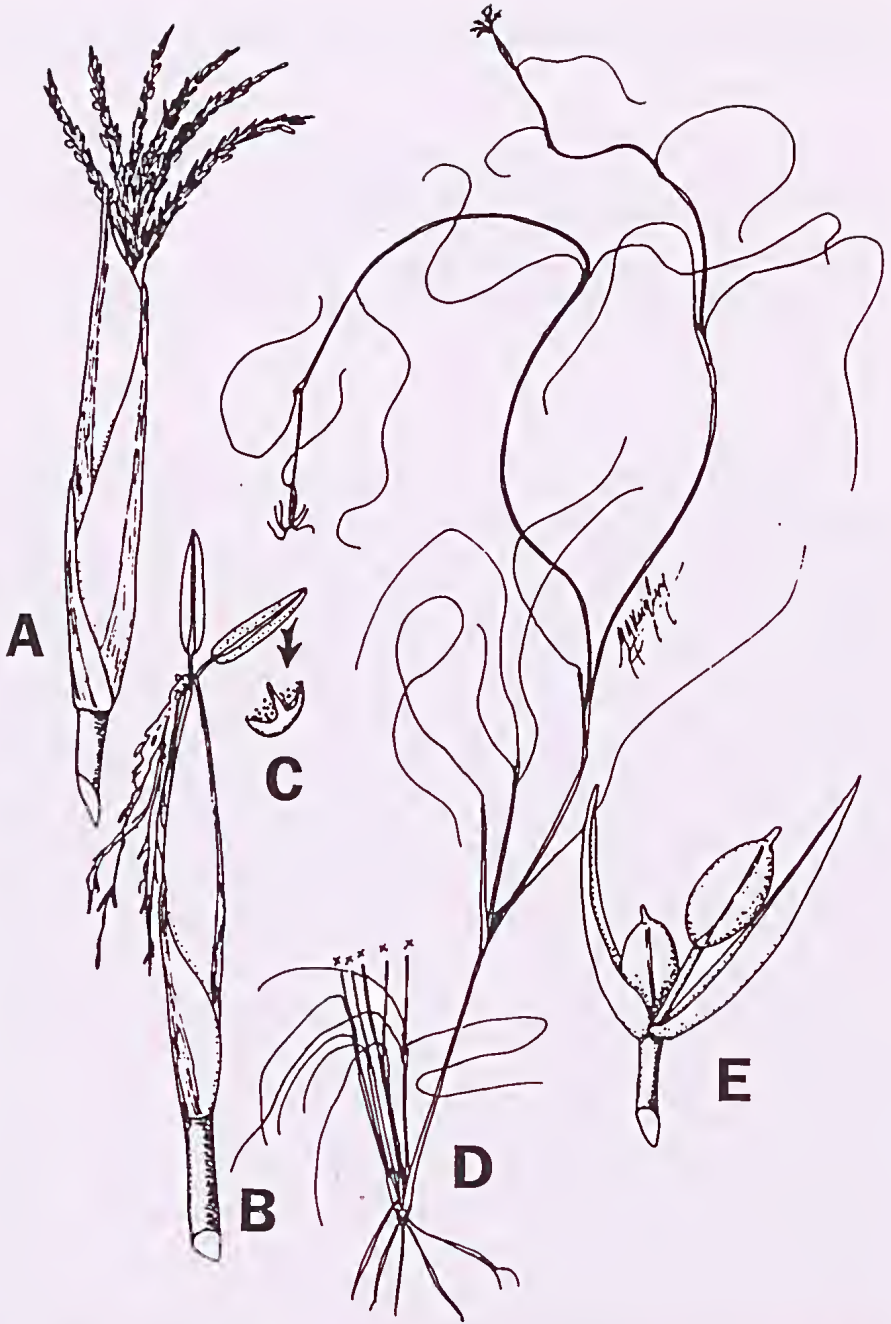


Figure 1. *Schoenus natans*; A, Inflorescence at female stage; B, Inflorescence at male stage; C, Transverse section of a mature stamen showing pollen release; D, Stem of mature plant; E, Mature fruits. Scale Bar = 1 mm.

and Keighery, 1995), the incredibly high species diversity of the ephemeral wetlands of the eastern side of the Swan Coastal Plain, nearly all of which have been lost to agricultural and urban development.

The habitat is similar to the pools present at Brixton Street (Keighery and Keighery, 1991). These pools also fill by winter rains, but they have an overstorey of low open *Melaleuca lateritia* and contain *Aponogeton hexatepalus*, *Hydrocotyle lemnoides*, *Isoetes drummondii* as the common spring aquatics, with *Villarsia submersa* and *Triglochin procera* being rarely recorded. *Schoenus natans* is not known from here.

Schoenus natans is an annual aquatic, much branched, from a single basal stem (Figure 1). Many hundreds of plants are found in each of the large shallow pools usually in dappled shade of full sun that are the preferred habitat. The numerous stems reach the surface of the water, but do not emerge and lie just below the water surface forming a dense intertwined mat. Inflorescences are produced at the ends of stems during Spring (from September to October), as the ponds reach maximum depth. The inflorescences float on the water surface and produce stigmas, then stamens above the water to enable wind pollination to occur (Figure 1, A and B). Because of the dense nature of the populations cross pollination can occur over very short distances. The resulting fruits are held on the plant, until mature when the pedicel decays. They then sink to the bottom and settle in the drying mud as summer approaches.

Plants die as the pools dry. If late rains re-fill the pools the high water temperatures seem to ensure that plants are moribund by late November. The pools contained water till late December in 1995, but all plants were dead by December 1.

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